STATE OF CALIFORNIA
Budget Change Proposal - Cover Sheet
DF-46 (REV 08/15)

Fiscal Year	Business Unit	Department	Priority No.
2016/17	3360	California Energy Commission	

Budget Request Name	Program	Subprogram
3360-009-BCP-DP-2016-GB	VARIOUS	VARIOUS

Budget Request Description
AB 802 (Williams) Accelerating Energy Efficiency Through Benchmarking and Customer Data Analysis

Budget Request Summary
This proposal requests 8 permanent positions and $500,000 in baseline technical support, for a total request of $1,645,000 from the Energy Resources Programs Account (ERPA), to support the implementation and success of Assembly Bill 802 (Williams, Chapter 590, Statutes of 2015). The Energy Commission, in collaboration with the California Public Utilities Commission (CPUC), will: implement a statewide public energy efficiency benchmarking program; establish the statewide benchmarking and reporting IT infrastructure; conduct rulemakings to establish the program regulations; collect and analyze data on an ongoing basis to improve energy demand forecasts; conduct education and outreach to promote the program; enable compliance; and continually assess progress toward efficiency goals and the impacts on future energy consumption.

Requires Legislation	Code Section(s) to be Added/Amended/Repealed
☐ Yes ☒ No	

Does this BCP contain information technology (IT) components? ☐ Yes ☒ No *If yes, departmental Chief Information Officer must sign.*	Department CIO	Date

For IT requests, specify the date a Special Project Report (SPR) or Feasibility Study Report (FSR) was approved by the Department of Technology, or previously by the Department of Finance.
☐ FSR ☐ SPR Project No. Date:

If proposal affects another department, does other department concur with proposal? ☐ Yes ☐ No
Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
		[signature]	11/17/15

Department Director	Date	Agency Secretary	Date
[signature]	11-18-15	[signature]	12/23/15

Department of Finance Use Only

Additional Review: ☐ Capital Outlay ☐ ITCU ☐ FSCU ☐ OSAE ☐ CALSTARS ☐ Dept. of Technology

BCP Type: ☐ Policy ☐ Workload Budget per Government Code 13308.05

PBA		Date submitted to the Legislature
	Original Signed By: Ellen Moratti	1/7/16

BCP Fiscal Detail Sheet

CP Title: Energy Efficiency (AB 802)

DP Name: 3360-009-BCP-DP-2016-GB

udget Request Summary

	FY16					
	CY	BY	BY+1	BY+2	BY+3	BY+4
Positions - Permanent	0.0	8.0	8.0	8.0	8.0	8.0
Total Positions	**0.0**	**8.0**	**8.0**	**8.0**	**8.0**	**8.0**
Salaries and Wages						
Earnings - Permanent	0	605	605	605	605	605
Total Salaries and Wages	**$0**	**$605**	**$605**	**$605**	**$605**	**$605**
Total Staff Benefits	0	260	260	260	260	260
Total Personal Services	**$0**	**$865**	**$865**	**$865**	**$865**	**$865**
Operating Expenses and Equipment						
5301 - General Expense	0	72	72	72	72	72
5302 - Printing	0	16	16	16	16	16
5304 - Communications	0	32	32	32	32	32
5306 - Postage	0	16	16	16	16	16
5320 - Travel: In-State	0	32	32	32	32	32
5322 - Training	0	16	16	16	16	16
5324 - Facilities Operation	0	80	80	80	80	80
5340 - Consulting and Professional Services - External	0	500	500	500	500	500
5346 - Information Technology	0	16	0	0	0	0
Total Operating Expenses and Equipment	**$0**	**$780**	**$764**	**$764**	**$764**	**$764**
Total Budget Request	**$0**	**$1,645**	**$1,629**	**$1,629**	**$1,629**	**$1,629**

Fund Summary

Fund Source - State Operations						
0465 - Energy Resources Programs Account	0	1,645	1,629	1,629	1,629	1,629
Total State Operations Expenditures	**$0**	**$1,645**	**$1,629**	**$1,629**	**$1,629**	**$1,629**
Total All Funds	**$0**	**$1,645**	**$1,629**	**$1,629**	**$1,629**	**$1,629**

Program Summary

Program Funding						
2385010 - Building and Appliances	0	912	906	906	906	906
2385028 - Demand Analysis	0	733	723	723	723	723
Total All Programs	**$0**	**$1,645**	**$1,629**	**$1,629**	**$1,629**	**$1,629**

CP Title: Ene[redacted] Efficiency (AB 802)

DP Name: 3360-009-B[redacted]DP-2016-GB

ersonal Services Details

Positions		Salary Information Min	Mid	Max	CY	BY	BY+1	BY+2	BY+3	BY+4
3583	Mech Engr (Eff. 07-01-2016)				0.0	1.0	1.0	1.0	1.0	1.0
4599	Energy Commission Supvr II (Forecasting) (Eff. 07-01-2016)				0.0	1.0	1.0	1.0	1.0	1.0
4936	Energy Commission Spec II-Efficiency (Eff. 07-01-2016)				0.0	1.0	1.0	1.0	1.0	1.0
4937	Energy Commission Spec III-Efficiency (Eff. 07-01-2016)				0.0	1.0	1.0	1.0	1.0	1.0
4948	Energy Commission Spec II-Forecasting (Eff. 07-01-2016)				0.0	3.0	3.0	3.0	3.0	3.0
4949	Energy Commission Spec III-Forecasting (Eff. 07-01-2016)				0.0	1.0	1.0	1.0	1.0	1.0
Total Positions					**0.0**	**8.0**	**8.0**	**8.0**	**8.0**	**8.0**

Salaries and Wages		CY	BY	BY+1	BY+2	BY+3	BY+4
3583	Mech Engr (Eff. 07-01-2016)	0	63	63	63	63	63
4599	Energy Commission Supvr II (Forecasting) (Eff. 07-01-2016)	0	94	94	94	94	94
4936	Energy Commission Spec II-Efficiency (Eff. 07-01-2016)	0	72	72	72	72	72
4937	Energy Commission Spec III-Efficiency (Eff. 07-01-2016)	0	80	80	80	80	80
4948	Energy Commission Spec II-Forecasting (Eff. 07-01-2016)	0	217	217	217	217	217
4949	Energy Commission Spec III-Forecasting (Eff. 07-01-2016)	0	79	79	79	79	79
Total Salaries and Wages		**$0**	**$605**	**$605**	**$605**	**$605**	**$605**
Staff Benefits							
5150350	Health Insurance	0	70	70	70	70	70
5150600	Retirement - General	0	190	190	190	190	190
Total Staff Benefits		**$0**	**$260**	**$260**	**$260**	**$260**	**$260**
Total Personal Services		**$0**	**$865**	**$865**	**$865**	**$865**	**$865**

Analysis of Problem

A. Budget Request Summary

This proposal requests 8 permanent positions and $500,000 in baseline technical support, for a total request of $1,645,000 from the Energy Resources Programs Account (ERPA), to support the implementation and success of Assembly Bill 802 (Williams, Chapter 590, Statutes of 2015). The Energy Commission, in collaboration with the California Public Utilities Commission (CPUC), will: implement a statewide public energy efficiency benchmarking program; establish the statewide benchmarking and reporting IT infrastructure; conduct rulemakings to establish the program regulations; collect and analyze data on an ongoing basis; conduct education and outreach to promote the program; enable compliance; and continually assess progress toward efficiency goals and the impacts on future energy consumption.

B. Background/History

AB 802 addresses the need for establishing a building energy use benchmarking and public disclosure program for nonresidential and multifamily buildings. Providing building owners with the knowledge of their energy use to enable actions for improving a building's energy performance was established in 2007 by the passage of Assembly Bill 1103 (Saldana, Chapter 533, Statutes of 2007). AB 1103 required electric and gas utilities, on and after January 1, 2009, to maintain records of energy consumption data of all nonresidential buildings to which they provide service, in a format compatible for uploading to the United States Environmental Protection Agency's (EPA) Energy Star Portfolio Manager (Energy Star Portfolio Manager), for at least the most recent 12 months. An electric or gas utility was required to upload all energy consumption data for a building to the Energy Star Portfolio Manager "*in a manner that preserves the confidentiality of the customer*".

A number of issues, however, impeded successful implementation of the program:

- Tenant energy use data access to building owners from utilities became a major challenge due to undefined parameters of what preserves confidentiality. Utilities cited the federal Privacy Act and trade secret laws as reasons for not providing tenant energy use data to building owners without tenant consent. Seeking tenant consent for multiple tenant situations, or where the authorized signatory was not physically occupying the building, meant that building owners could not get this data without significant loss of time, and sometimes not at all. Lack of statutory authority for this aspect of the program prevented the Energy Commission from establishing these parameters within the AB 1103 rulemaking process.
- Tethering of the disclosure requirements to the time of sale, lease, or financing of a building greatly limited the value of the information.
- Given the proprietary nature of individual energy use data, it made sense for the energy use disclosure to be limited to persons participating in a financial transaction pertaining to the building property. However, the intent of the legislature was to facilitate a benchmarking system and have a building's energy use influence the buyer's decision-making.

AB 802 addresses these issues by:

- Providing explicit direction to utilities for aggregating energy use data as a means of preserving confidentiality and specifying the conditions (number of utility service accounts, building category) when aggregation must be performed.
- Removing transaction-based disclosure requirements from the statute and providing the Energy Commission with clear authority to determine, by means of regulations, when disclosure would be required.
- Providing clear direction for establishment of a public disclosure program and authorizing Energy Commission to do so.

To support a robust, analytical framework that would be necessary to establish programmatic components required by the law, AB 802 also expands the Energy Commission's existing authority to collect data from utilities, fuels suppliers, and other market participants, for the purposes of energy program design,

evaluation, forecasting, and planning. This authority is critical in order to enable the Energy Commission to conduct the studies needed to develop new retrofit programs to bring inefficient buildings up to current standards and to assure that other studies are conducted to determine the pattern of savings compared to existing demand forecasting models to create demand forecasts.

C. State Level Considerations

ENERGY ASSESSMENTS

As a direct result of AB 802, the CPUC may direct investor-owned utilities to make filings necessary to ensure coordination with the energy forecast and planning functions of the Energy Commission and the California Independent System Operator (CAISO). The CPUC, in consultation with the Energy Commission will consider the following:

1. The results of any interagency energy baseline assessment.
2. Results from investor-owned utility baseline pilot studies ordered to understand how energy efficiency baselines are applied, in relation to deferred building retrofits and the ability of program administrators to target and accelerate such upgrades cost-effectively (CPUC D14-10-046).
3. Information necessary to ensure consistency with the energy forecast and planning functions of the Energy Commission and the CAISO.

ENERGY EFFICIENCY

Integration of a Statewide Program with Local Benchmarking Ordinances

Creating a statewide benchmarking program while taking into account existing local benchmarking ordinances will require significant coordination. A number of cities across California are on the path to establishing local benchmarking ordinances. For example, San Francisco has a successful non-residential building benchmarking program, and Berkeley's Energy Savings Ordinance will be effective December 1, 2015. The Energy Savings Ordinance defines requirements for both residential and non-residential buildings for time-certain building energy use disclosure, retro-commissioning and building energy audits.

Nationally, over 56 jurisdictions have established local benchmarking ordinances and California will be the first state to establish a statewide public benchmarking program.

Leveraging Existing or Upcoming Federal Infrastructure

For covered buildings subject to public disclosure requirements (nonresidential buildings above 50,000 square feet and mixed use, or multifamily buildings with 15 or more service accounts), the statute provides explicit guidance to use the Energy Star Portfolio Manager. The Energy Star Portfolio Manager is an online tool that building owners can use to measure and track energy and water consumption. It may be used to benchmark the performance of one building, or a whole portfolio of buildings, in a secure online environment and is used across the nation for nonresidential and multifamily building benchmarking.

There are certain limitations to the Energy Star Portfolio Manager that must be accounted for in the development of the statewide reporting infrastructure. It was originally designed to encourage building owners to make their building Energy Star-compliant, and is not ideal for creating disclosure documents. It also does not provide a public-facing reporting framework meant for use by governmental agencies. It is primarily a property benchmarking tool with an internal sharing capability.

In an effort to facilitate benchmarking, the United States Department of Energy (DOE) has started to develop a database exchange platform known as Standard Energy Efficiency Data exchange platform (SEED). SEED enables the combining and management of data from multiple data sources, such as parcel data from county assessors, which are necessary for reporting. SEED plans to connect with the Energy Star Portfolio Manager and enable automatic streaming of data, but this functionality is still under development.

These efforts can be successfully leveraged with careful planning and coordination with local and federal agencies. Finally, the reporting infrastructure would need to be developed which would provide the public facing component of the benchmarking program.

D. Justification

ENERGY ASSESSMENTS (5 PY)

AB 802 works in conjunction with SB 350 to pursue Governor Brown's goal to double the savings already planned for energy efficiency in the electricity and natural gas sectors. Both SB 350 and AB 802 direct the Energy Commission to assume the lead role in energy efficiency planning and oversight because of the strong linkage between energy efficiency planning and demand forecasting.

The increased emphasis on energy efficiency as a means of reducing GHG emissions logically leads to a reduction in the forecast growth of "net" electricity demand. The magnitude of the impact on annual electricity consumption by end-users, the likely impact on peak demand, and the influences of the energy efficiency measures actually accomplished throughout the year can only be determined by complex, data-driven modeling and forecasting techniques.

SB 350 requires the Energy Commission to establish statewide and utility-specific energy efficiency targets that double previous energy efficiency levels used in electricity planning studies and procurement decision-making. A new ongoing process will be created to establish 2030 targets at the statewide and utility-specific level and then to monitor utility progress toward achieving these goals. AB 802 has three components that work in conjunction with the goals established in SB 350: (1) enable the Energy Commission to acquire individual utility customer usage and billing data from the utilities for use in studies that will improve demand forecasting and technical understanding of the role of energy efficiency in reducing customer demand; (2) require studies of the potential for new savings and acceleration of already planned energy efficiency savings that the CPUC can use as a guide to authorize a new set of energy efficiency retrofit programs that can help achieve the targets established; and (3) require the Energy Commission to consider how this new class of utility programs might require adjustments to electricity and natural gas demand forecasts.

To meet the goals and accomplish the objectives of AB 802, the Energy Assessments Division requests five permanent positions.

Access to Individual Utility Customer Usage and Billing Data

AB 802 alters the fundamental access to energy information by allowing the Energy Commission to obtain individual customer usage and billing data from electric and natural gas utilities.

After 30 years of intensive effort to increase energy efficiency of homes and businesses, and the new requirements of the Energy Commission to establish energy efficiency targets for individual utilities as part of overall GHG emission reduction strategies, an improved understanding of the remaining potential and the barriers to achieving such potential is required. This new access to individual customer usage and billing data will allow for better studies of customer adoption practices than could be conducted in the past. For example, what are the characteristics of early participants in energy efficiency programs compared to those who have not yet participated? Where research identifies differences, what new program designs or approaches can overcome the demonstrated unwillingness to participate? Individual customer data will be extremely helpful in answering these questions, but the volume of data may be enormous and the security challenges to ensure it remains protected from unauthorized use will require special data handling and processing safeguards.

Analyses to Support Bringing Buildings up to Current Standard Compliance

AB 802 expressly authorizes the CPUC to allow utilities to undertake new programs that will incent end-users to install measures that bring buildings from below standard to meeting the current standard.

Energy Commission staff will need to study the extent to which this condition exists, both for older buildings built prior to Title 24 standards and those buildings nominally built to Title 24 standards since the early

1980s, but which may not have actually been built to code when constructed.[1] A better understanding of the extent of this new segment of energy efficiency potential is critical in determining its potential contribution in achieving the doubling of energy efficiency targets set out in SB 350, as well as enabling specific retrofit programs to be designed that are cost-effective and achievable. Access to individual customer billing and usage data and the ability to aggregate such data will be important in demonstrating to building owners that cost-effective retrofits are feasible.

Modifications to Demand Forecasts as Buildings Come Up to Code

AB 802 requires the Energy Commission to consider demand forecast modifications to address the pattern of savings from new programs and will require extensive analyses of the specific features of new programs authorized to fund retrofits from below code, to code compliance. Currently, Energy Commission demand forecasting models are designed to replace below standard appliances and equipment with equipment satisfying standards upon "burnout." Therefore, it is possible that new programs will merely accelerate the introduction of retrofit efficiency measures, but not greatly increase long-term energy efficiency.

ENERGY EFFICIENCY (3 PY + $500k in contract funds)

AB 802 requires the Energy Commission to achieve the following:

Establish Statewide Benchmarking and Reporting Infrastructure

AB 802 revises Public Resources Code (PRC) Section 25402.10 to require utilities to provide energy consumption data of covered buildings to the owners of those buildings upon request, and further requires the Energy Commission to establish a building energy use disclosure and public benchmarking program for certain buildings. Specifically:

1. The Energy Commission is required to adopt regulations related to the obligation of utilities to disclose energy consumption data to owners and operators of all covered buildings, defined as all nonresidential buildings and multifamily buildings with five or more active utility accounts, upon request.

2. The Energy Commission is required to develop and implement a program providing for the benchmarking of energy use data for certain covered buildings greater than 50,000 square feet. The Energy Commission must:

    - Identify what energy usage data needs to be collected, how it should be collected and what information should be made public
    - Identify what other additional information needs to be collected (like building square footage) that is necessary to develop relevant metrics
    - Develop analytic tools and metrics for public reporting
    - Establish the infrastructure necessary to securely collect raw energy usage information, analyze it, and publically report select metrics
    - Set a schedule to implement the requirements for public disclosure adopted by the Energy Commission
    - Determine if compliance with a local or county benchmarking program fulfills the Energy Commission's requirements adopted pursuant to PRC Section 25402.10

The Energy Commission is additionally tasked with enforcing both the public and the private disclosure program, including the assessment of fines for noncompliance.

Current federal efforts such as SEED (discussed above) are under way to help local jurisdictions and agencies to establish benchmarking programs, but are nascent and are not envisioned to provide support to individual programs. They are also not designed to provide long-term database hosting support. The

[1] "Compliance" with Title 24 building standards is further complicated by the Energy Commission's adoption of "performance based standards" in which builders have latitude to mix and match various component and building shell measures as long as the building satisfies an overall annual energy budget. For any specific building component, it is difficult to determine whether it does not satisfy Title 24.

Energy Commission will closely monitor these federal efforts for establishing data exchange platforms so that these can be appropriately leveraged. Without the establishment of a statewide infrastructure, the program will fail to meet the legislature's desired objectives of enabling the marketplace through information dissemination.

To meet the goals and accomplish the objectives of AB 802, the Energy Efficiency Division requests 3 permanent positions. Baseline contract funds of $500,000 are also requested to develop the statewide benchmarking and reporting infrastructure, including development of functional requirements, and alignment with local, DOE and EPA efforts. These contract funds are needed to buy additional datasets that are not publically available but are essential to develop building energy use metrics. Contract funds will also be necessary to train staff in the use of reporting tools and to provide backend maintenance of this infrastructure.

Collect and Analyze Data

In conjunction with establishing benchmarking and reporting infrastructure, the Energy Commission will determine how best to collect, analyze and report data so that it can positively influence the marketplace. The Energy Commission will procure additional supporting data (such as building population and characteristics data) to determine program compliance. Staff will monitor compliance and take action against non-complying entities. Analytical staff will investigate the effects of benchmarking on energy use by analyzing other complementary databases, conducting surveys and preparing reports.

Determine Program Phase-in Schedule

Appropriately phasing-in such a large program will be essential. Smaller jurisdictions around the country are developing program phase-in guidelines based on the size of the building, use type, level of benchmarking detail, and disclosure trigger points. California will have the first statewide comprehensive benchmarking program that is not transaction-based. Given the diversity of building types and demographics in the state and existence of a few local benchmarking ordinances, the Energy Commission will critically analyze the possible phase-in options, and pros and cons for each. This will be done as part of a public process and will include a high level of coordination with numerous local jurisdictions that either already have benchmarking ordinances or are poised to launch an ordinance in the near future. Building-level data from utilities will help the Energy Commission to understand how meters are grouped by building sizes, so that program regulations can be drafted with a full understanding of the reporting burden on building owners.

Coordinate with Local Jurisdictions, the EPA and DOE

The Energy Commission will provide support and guidance to local jurisdictions that either already have or are about to launch a benchmarking ordinance so that statewide and local reporting systems are seamlessly integrated, leverage each other's resources, and do not inadvertently impose dual reporting on the building owner. The Energy Commission will also work to influence federal efforts to develop needed functionality in existing federal tools such as the Energy Star Portfolio Manager.

Conduct Public Hearings, Pre-rulemaking and Rulemaking Activities

The Energy Commission will adopt regulations that will provide details on specific implementation aspects of the program to avoid market confusion. For example, the Energy Commission will engage in a public process to determine which benchmarking data will be subject to public disclosure and how often. Personnel resources are needed to study best practices and develop regulations in line with Administrative Procedure Act requirements.

Conduct Education and Outreach Activities; Monitor and Enable Compliance

Once program regulations and reporting infrastructure are in place, staff time will be redirected to outreach and education activities, as well as monitoring and enabling compliance. This will include periodic workshops, seminars and events targeted to building owners that explain the law and provide step-by-step guidance on how to comply with the Energy Commission regulations. The Energy Commission will also establish other resources such as a dedicated hotline and website to assist building owners.

E. Outcomes and Accountability

ENERGY ASSESSMENTS

Four primary outcomes are expected from the successful implementation of this proposal:

1. **Improve energy demand forecasts and assessments.** If approved, this proposal will provide the necessary resources to leverage new detailed individual customer electric and gas usage and billing data to improve the Energy Commission's widely used energy demand forecasts and assessments.
2. **Understand energy policy and program impacts.** With the recent mandate of doubling energy efficiency, the signing of the Clean Energy and Pollution Reduction Act of 2015, and the expansion of savings opportunities, staff will leverage new methods and data to adequately understand the potential impacts to future energy consumption.
3. **Develop adjustments to the energy demand forecast.** With new definitions of energy efficiency savings estimates defined in recent legislation, staff will develop a method for quantifying the savings and arrive at a reasonable adjustment to the energy demand forecast.
4. **Protect sensitive data.** The requested resources will be critical in developing, implementing, and maintaining data security processes to ensure all data is protected against unauthorized or inadvertent disclosure.

ENERGY EFFICIENCY

AB 802 has clearly defined three sequential components necessary to enable building benchmarking with the goal of driving energy efficiency upgrades. These are:

1. Provision of whole building energy use data to the building owner to inform owners as to appropriate cost-effective energy upgrades.
2. Establishment of a public benchmarking program that creates an expanded market for energy efficient buildings and drives building owners to make cost-effective energy upgrades in order to stay competitive.
3. Clear authority for the Energy Commission to establish rules for data access and transfer, and to enforce compliance.

What is the hiring plan for the positions being requested?

The Energy Commission will go through its normal recruitment process to fill the approved positions. This includes development of a duty statement that defines what each staff person will be expected to accomplish, preparation of a Job Opportunity Bulletin to announce the position, and a Request for Personnel Action to launch the recruitment. The Energy Commission will consider candidates on existing lists as well as lateral transfers from other state agencies. The Energy Commission will review the qualifications of all candidates and will interview and contact references for the most qualified candidates. The hiring decision and appointment will occur at the earliest possible time.

What measures will be taken to ensure that outcomes identified in this Proposal are achieved?

For technical support, the Energy Commission will establish evaluation criteria that emphasize high quality work on all deliverables and will select the proposal that demonstrates the most expertise and understanding of the work and proposes approaches that will result in the highest quality deliverables. Contracts that are approved will be managed by an assigned contract manager who will review the deliverables of the contract to ensure that they meet the work statement, terms of the contract, and the needs of the Energy Commission. Many of the contractor deliverables will be subject to public review as part of the public workshops/hearings that the Energy Commission will conduct prior to their finalization, and contractors will be expected to address public comment as directed by the contract manager.

Analysis of Problem

Staff will complete work under the direction of supervisors and management. Staff will be provided with clear guidance on how to approach the work and with training to assist them in conducting the work. Supervisors and management will provide regular review of work products and will provide quality control to ensure the work is done effectively. Most of the work must be done under public review, whereby work products will be presented at public workshops for comment, and comments will be addressed in final versions of the work products.

What controls will be in place to ensure the appropriate use of the requested resources or authority?

Annually, the Energy Commission prepares detailed work plans and allocations of authorized funds. The Energy Commission's work plans will identify the approved resources to be only available for expenditure on specific work identified in this proposal.

How will the requested resources be accounted for and monitored?

Newly authorized positions will be established in the appropriate program/element and office, and expenditures will be accounted for under unique accounting units and CALSTARS program cost accounts (PCA). Allocation and encumbrance of authorized contract resources will be recorded in the fiscal office's contract database. Program staff will develop and execute the contract, ensuring the work statement, tasks, budget, and deliverables are consistent with the approved proposal. Once executed, the ongoing contract management and monitoring for compliance will be performed by assigned program contract managers who have been trained to be effective contract managers.

Will there be progress and/or outcome reports completed? If so, how often and to whom will they be distributed?

Technical support will be required to report detailed data to ensure the funds are effectively used with high levels of transparency and accountability. Staff will prepare outcome reports on major topics covered in this proposal. Outcome reports will be distributed to persons that have a stake in the outcomes of the programs. These reports will be presented at public workshops while they are in the draft stage and will be disseminated through the Energy Commission website list servers.

F. Analysis of All Feasible Alternatives

Alternative one: Do Nothing

Pros: No fiscal impact

Cons: A statewide benchmarking program cannot be established without the enabling infrastructure in place, and energy demand forecasting that assesses progress toward energy efficiency goals will be inaccurate. Without the requested resources, the Energy Commission will not be able to fulfil its statutory obligations to establish and maintain this infrastructure or conduct supporting studies and forecasts. Building owners will be frustrated with the lack of clear guidelines or compliance support, and California will lose an opportunity to enable energy efficiency upgrades that result from successful programs.

Alternative Two: Redirect Existing Resources

Pros: No fiscal impact

Cons: The current existing buildings program is focused on the implementation of other aspects of the Existing Buildings Energy Efficiency Action Plan (AB 758) and the doubling of energy efficiency in existing buildings mandate: establishing meter-based savings verification protocols; establishing building energy

use baselines; and coordinating with CPUC to ensure alignment with Action Plan goals. These tasks are critical to achieving the doubling of energy efficiency in just 15 years. Forecasts would also continue to suffer and there would be no reliable way to incorporate more granular data that would measure true progress toward energy efficiency goals.

Alternative Three: Approve Requested Resources

Pros: With the approval of 8 permanent positions and $500,000 in baseline technical support, the Energy Commission will have the needed resources to support the successful implementation of AB 802.

Cons: Requires appropriation to fund additional staff and technical support.

G. Implementation Plan

ENERGY ASSESSMENTS

1. Ensure that all security challenges are addressed to ensure utilities' customer information remains protected from unauthorized use and that required data handling and processing safeguards are in place. (January 2016)
2. Obtain necessary individual customer usage and billing data from electric and natural gas utilities. (June 2016)
3. Begin recruitment for and fill new positions. (July 2016)
4. Coordinate with the CPUC in their energy efficiency program proceedings as investor-owned utilities are allowed to undertake new programs that will incent end-users to install measures that bring buildings from a below code to meeting the code condition. (September 2016)
5. Identify available data and current research on the following topics (October 2016):
    a. Remaining energy efficiency potential and the barriers to achieving such potential
    b. California utilities' customer energy efficiency program adoption practices
    c. California customer compliance to Title 24 standards
6. Identify new program designs or approaches that can overcome the demonstrated unwillingness to participate in energy efficiency programs. (October 2016)
7. In working group setting with CPUC, discuss with stakeholders (electricity and gas utilities, rate advocates, and environmentalists) approaches for research plan. (November 2016)
8. Develop draft research plan and hold public workshop to receive comments. (November 2016)
9. Finalize research plan. (December 2016)
10. Conduct first phase of complex studies (phases may be adjusted once research plan is finalized) to obtain solid understanding of: (January – June 2017)
    a. Remaining energy efficiency potential and the barriers to achieving such potential.
    b. Whether new program designs or approaches overcome the demonstrated unwillingness to participate.
    c. Impact of CPUC allowing utilities to undertake new programs that will incent end-users to install measures that bring buildings from a below code to meeting the code condition.

   d. Extent that older buildings built prior to any Title 24 standards and those buildings nominally built to Title 24 standards since the 1980s have not been built to code when constructed.

11. In working group setting with CPUC and CAISO, discuss with stakeholders (electricity and gas utilities, rate advocates, and environmentalists) possible demand forecast modifications as the result of the first phase of analyses from complex studies. (July 2017)

12. As result of the first phase of study and working group discussions, determine savings adjustments to Energy Commission demand forecasts. (August 2017)

13. Prepare improved forecast of customer use of gas and electric consumption using findings from studies, present forecast at public workshops for comments, and present the final forecast for adoption by the Energy Commission. (November 2017)

14. After possible adjustment to research plan to meet current needs, conduct second phase of complex studies to obtain solid understanding of: (January 2018-August 2018)

    a. Behaviors and other impacts that affect how customers use electricity and natural gas by analyzing utility billing and use data in conjunction with other energy related information.
    b. Extent to which the new segment of energy efficiency potential contributes to satisfying SB 350 energy efficiency targets as well as enabling specific retrofit programs to be designed that are cost-effective and achievable.
    c. Customer energy efficiency program adoption practices and identify new program designs or approaches that can overcome the demonstrated unwillingness to participate

15. In working group setting with CPUC and CAISO, discuss with stakeholders (electricity and gas utilities, rate advocates, and environmentalists) possible demand forecast modifications as the result of the second phase of analyses from complex studies. (September 2018)

16. As result of the second phase of study and working group discussions, determine savings adjustments to Energy Commission demand forecasts. (November 2018)

17. After possible adjustment to research plan to meet current needs, conduct third phase of complex studies. (January 2019-August 2019)

18. Prepare improved forecast of customer use of gas and electric consumption using findings from studies, present forecast at public workshops for comments, and present the final forecast for adoption by the Energy Commission. (November 2019)

ENERGY EFFICIENCY

1. Conduct a public workshop to outline the scope of the statute, identify the scope of Energy Commission regulations, and seek early stakeholder input on expectations and outcomes for establishment of the public benchmarking infrastructure. (November 2015)

2. Begin drafting regulations for stakeholder input and present at a public workshop. (November-February 2016)

3. Begin administrative activities including creation of work scope necessary to solicit proposals for development of the statewide reporting and analysis infrastructure. (November 2015)

4. Begin a needs assessment to determine local and state program needs, identify commonalities, and determine appropriate integration of federal resources for statewide benchmarking infrastructure. (December 2015-Feb 2016)

5. Begin a rulemaking to finalize Energy Commission regulations. (January 2016-January 2017)

6. Begin recruitment for and fill new positions. (July 2016)

7. Solicit proposals for contractor to conduct data collection, reporting, analysis, and compliance monitoring infrastructure work. (July 2016)

8. Pilot-test public benchmarking infrastructure with interested local jurisdictions. (July 2016- December 2016)

9. Oversee contractor work in development of data collection, reporting, analysis, and compliance monitoring infrastructure in coordination with local jurisdictions, the EPA, DOE, and other agencies as necessary. (August 2016-August 2018)

10. Procure additional datasets, exchange protocols, or application program interfaces, if available (such as through federal or other efforts outside of California). Otherwise, oversee contractor for development of the necessary components. (August 2016-March 2017)

11. Work with utilities to procure data necessary for architecting and testing the database infrastructure. (August 2016-March 2017)

12. Commence outreach and education across the state with various stakeholder groups to ensure awareness and understanding of the upcoming regulations. (August 2016 onwards)

13. Oversee contractor in providing ongoing maintenance and troubleshooting of the statewide infrastructure. (August 2016 onwards)

14. Provide education and training support for the statewide benchmarking program. (January 2017 onwards)

15. Begin enforcement activities. (January 2018)

H. Supplemental Information

The Existing Buildings Energy Efficiency Action Plan may be found at:

http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-05/TN206015_20150904T153548_Existing_Buildings_Energy_Efficiency_Action_Plan.pdf

Information related to DOE's Standard Energy Efficiency Data Exchange Platform:

http://energy.gov/eere/buildings/standard-energy-efficiency-data-platform

Information related to the value of benchmarking for instigating energy efficiency:

http://www.imt.org/uploads/resources/files/Creating_Value_From_Benchmarking_IMT.pdf

I. Recommendation

Approve 8 permanent positions and $500,000 in annual baseline contract funds, for a total request of $1,645,000 from ERPA, to enable the Energy Commission to implement the statewide benchmarking program; collect energy usage data for utility customers; enhance the Energy Commission's forecasting, planning and program design; and increase energy savings in California in the short- and long-term.

AB 802 Program Support Tasks and PY Allocation	Energy Commission Specialist III	Energy Commission Supervisor II	Energy Commission Specialist II	Energy Commission Specialist II	Energy Commission Specialist II	Energy Commission Specialist III	Mechanical Engineer	Energy Commission Specialist II
ENERGY ASSESSMENTS DIVISION								
Improving Forecasting and Assessments								
Provide individual customer historic electric and natural gas consumption and billing data at a level of granularity defined by Energy Commission to the Energy Commission on a regular basis	120	50			240			
Work with forecasters to redesign models or develop new forecast methods to accommodate customer billing and usage data	80				120			
Develop, maintain, and modify policies/protocols to safeguard customer data in an automated data security standard (DSS) system	80	40	250					
Work with management to determine the program-specific data owner for each data set			200					
Monitor data security compliance and ensure all data has been entered into automated DSS system and is appropriately recorded, approved, and handled.	20	20	150					
Provide regular reports and audit documents to management and stakeholders regarding data security compliance			150					
Policy and Program Evaluations								
Scope and monitor policy and program analyses and coordinate activities to ensure adequate approval and review for priority policies and programs	350	80		80				
Review existing research on policy and program evaluations, including utility and CPUC pilot studies and evaluation work	40			100	100			
Review extent to which EM&V studies can identify physical conditions of existing building stock to estimate population scale potential (existing baseline)	40		100	100	100			
Develop and implement methodologies for evaluating the effectiveness, scope, and final impacts of policies and programs, differentiating to-code and additional incremental savings from existing and future programs				500				
Work with DASU to define Energy Commission study activities to evaluate existing policies and programs, implement studies to collect data needed to evaluate existing policies and programs	100		700	100	100			
Ensure proper collection of data on existing buildings before and after adoption of measures and installation of equipment			70	100	120			
Develop and implement a methodology to match data with whole buildings to assist with the evaluation of building retrofit cost effectiveness and feasibility	100				300			
Validate methodology and allocation of energy usage to buildings			80	80	80			
Evaluate interagency baseline assessments and work with CPUC staff and other stakeholders to ensure baseline methodology reflects and incorporates adequate information for use in the demand forecast impacts assessments and determination of adjustments	200			100	100			
Maintain consistency between agencies for forecast and planning functions for all impact assessments and forecasting work	250			40				
Forecasting Adjustments								
Work with the lead forecaster to develop adjustments and perform evaluation of impacts from findings of market conditions and existing baselines	80			300	300			
Develop methodologies for incorporating impacts of new data into the forecasts	60	40		200	140			

Management								
Supervise the new unit to evaluate policies and programs which potentially impact demand forecasting and support the development of recommendations to modify forecasts and Energy Commission analyses		400						
Provide technical expertise for a public process that develops a statewide estimate of potential energy efficiency and a process for establishing annual targets that double statewide energy efficiency and demand reduction savings for individual electric and natural gas utilities		400						
Perform administrative duties including work plans, budgets, monthly reports, individual development plans, performance appraisals, and probationary reports.		200						
Provide communication to stakeholders and participate in meetings regarding the integration of policy and program impacts on demand forecast		100						
Guide forecasting modeling modification research, convene meetings with forecasters to strategize about modifications, and monitor updated and modifications in the context of IEPR and forecasting responsibilities		150						
Communication and Outreach								
Attend DAWG meetings	40	60	36	20	20			
Meet and coordinate development of adjustments with CPUC staff and other stakeholders	40	60						
Attend Lead meetings and perform briefings as necessary	80	80						
Lead workshops on demand characterization topics and study of program and policy impacts on forecasts	96	96						
Participate in public workshops, present material, answer stakeholder questions, and address issues			40	56	56			
EFFICIENCY DIVISION								
Establish statewide Benchmarking Program and Reporting Infrastructure								
Oversee the development of the statewide benchmarking and reporting infrastructure, provide technical direction to lead the analysis work, oversee technical studies and assimilation of best practices into the development of regulations						800		
Represent the Energy Commission in interagency dialogues with national labs, Think tanks, DOE, EPA, utilities and local jurisdictions; be the Division liaison to ensure that collected data and infrastructure are leveraged by other programs for enhancing building energy use forecasts						400	50	
Determine appropriate metrics for public disclosure. Determine, through needs assessment studies, best practices to collect, analyze and report data						300	200	700
Ensure alignment with federal and other local efforts; lead technical reports including leading research, surveys and interviews to refine system models and program requirements						200	350	600
Develop program support documentation for public dissemination such as compliance and enforcement guidelines						100	400	600
Conduct Rulemakings and develop regulations							800	100
TOTAL STAFF HOURS	**1,776**	**1,776**	**1,776**	**1,776**	**1,776**	**1,800**	**1,800**	**2,000**
STAFF PY @ 1,776 Hours/PY	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**

Energy Assessments Division

Demand Analysis Office (Current)	Demand Analysis Office (Proposed)
Energy Resources Specialist III (Managerial) o Sr. Mechanical Engineer o Sr. Mechanical Engineer o Research Specialist III o EC Specialist III o EC Specialist III o EC Specialist III o Office Technician	**Energy Resources Specialist III (Managerial)** o Sr. Mechanical Engineer o Sr. Mechanical Engineer o Research Specialist III o EC Specialist III o EC Specialist III o EC Specialist III o Office Technician
Demand Forecasting Unit o Sup II o EC Specialist II o EC Specialist II o EC Specialist I o EC Specialist I o EC Specialist I o EC Specialist I o Associate Energy Specialist o Associate Energy Specialist	**Demand Forecasting Unit** o Sup II o EC Specialist II o EC Specialist II o EC Specialist I o EC Specialist I o EC Specialist I o EC Specialist I o Associate Energy Specialist o Associate Energy Specialist
Data Collection Unit o Sup II o EC Specialist II o EC Specialist I o EC Specialist I o EC Specialist I o EC Specialist I o EG System Specialist I o Associate Energy Specialist o Associate Energy Specialist o Management Services Technician	**Data Collection Unit** o Sup II o EC Specialist II o EC Specialist I o EC Specialist I o EG System Specialist I o Associate Energy Specialist o Associate Energy Specialist o Management Services Technician
Data Analysis and Survey Unit o Sup II o EC Specialist II (Limited-Term) o EC Specialist II (Limited-Term) o Research Program Specialist II (Limited-Term) o Research Program Specialist I (Limited-Term) o Associate Energy Specialist (Limited-Term) o Mechanical Engineer (Limited-Term)	**Data Analysis and Survey Unit** o Sup II o EC Specialist II (Proposed Perm 16/17) o EC Specialist II (Proposed Perm 16/17) o Research Program Specialist II (Proposed Perm 16/17) o Research Program Specialist I (Proposed Perm 16/17) o Associate Energy Specialist (Proposed Perm 16/17) o Mechanical Engineer (Proposed Perm 16/17)
Transportation Energy Forecasting Unit o Sup II o EC Specialist II o EC Specialist II o EC Specialist I o EC Specialist I o Associate Energy Specialist o Energy Analyst	**Transportation Energy Forecasting Unit** o Sup II o EC Specialist II o EC Specialist II o EC Specialist I o EC Specialist I o Associate Energy Specialist o Energy Analyst
	Program Impacts Unit o Sup II o EC Specialist III o EC Specialist II o EC Specialist II o EC Specialist II o EC Specialist I (moved from Demand Forecasting Unit) o EC Specialist I (moved from Data Collection Unit)

EFFICIENCY DIVISION

o Deputy Director
o EGSPS III
o ER Spec III

Administration Office
o AGPA
o Executive Assistant

Appliances and Existing Buildings Office
o ER Spec III
o OT
o SME
o SEE
o Spec III
o Spec III
o Spec III Proposed 16/17

Appliance Standards Development
o Attorney T&D to Sup II (EFF)
o ME
o ME
o ME
o AEE
o Spec II (EFF)
o Spec II (EFF)
o EA

Existing Buildings
o Sup II (EFF)
o ME
o ME Proposed 16/17
o Spec II (EFF) Proposed 16/17
o Spec I (EFF)
o Spec I (EFF)
o AES (EFF)
o AES (EFF)
o EA

Standards Implementation Office
o ER Spec III
o OT
o SME
o SME
o Spec III

Compliance & Enforcement
o Sup II
o ME
o ME
o Spec I (EFF)
o Spec I (EFF)
o Spec I (EFF)
o EA
o EE – (LT)

Outreach & Education
o Sup II (EFF)
o EE
o EE
o ME
o ME
o Spec II (EFF)
o Spec I (EFF)
o EA
o EA

Building Standards Office
o ER Spec III
o OT
o SME
o SME
o SCE
o SEE

Building Standards Development
o Sup II (EFF)
o AEE
o EE
o ME
o ME
o ME
o Spec II (EFF)
o Spec I (EFF)
o EA

Standards Tools Development
o Sup II (EFF)
o ME
o ME
o Spec I (EFF)
o EA
o EA
o EA

Local Assistance and Financing Office
o ER Spec III
o OT
o SME
o SME
o SME
o Spec III (EFF)
o Spec III (EFF)
o AGPA

ECAA Energy Assurance & ARRA
o Sup II (TED)
o ME
o ME
o ME
o ME
o Spec II (EFF)
o Spec II (EFF)
o Spec II (EFF)
o Spec II (EFF)
o Spec II (EFF)

ECAA Education
o Sup II (EFF)
o AME
o ME
o ME
o ME
o ME
o Spec I (EFF)
o Spec II (EFF)

Prop 39
o Sup II (EFF
o Spec II (TED)
o Spec II (EFF)
o Spec I (EFF)
o Environmental Scientist T&D to Spec I (EFF)
o AES (EFF)
o EA